

Docket No.: 31176280-054003  
62465A US  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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In re Patent Application of:  
Robert K. Rosen, et al.

Application No.: 10/509,212

Confirmation No.: 5115

Filed: September 24, 2004

Art Unit: 1713

For: Low Molecular Weight Copolymer of  
Ethylene and Vinyl Aromatic Monomer and  
Uses Thereof

Examiner: Ling Siu Choi

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**RESPONSE TO OFFICE ACTION MAILED JANUARY 16, 2007**

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In response to the Office Action dated January 16, 2007, Applicants respectfully present this response. The three-month deadline for response is April 16, 2007. Therefore, this response is timely filed. The applicants respectfully request that the Examiner consider this application in view of the following amendments and remarks.

**Amendments to the claims** begin on page 2 of this paper.

**Remarks/Arguments** begin on page 4 of this paper.

**AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of the claims**

1. (Currently Amended) An article of manufacture, comprising:  
a linear copolymer of ethylene and vinyl aromatic monomer having a weight average molecular weight of less than 15,000, wherein the copolymer is characterized by a backbone having a first and second terminal end group, the first terminal end group is a methyl group, the second terminal end group is a vinyl group, wherein the ratio of the terminal methyl group to the terminal vinyl group is 0.8:1 to 1:0.8.
2. (Previously canceled)
3. (Original) The article of manufacture of claim 1, wherein the backbone of the copolymer is substantially free of a vinylidene group.
4. (Original) The article of manufacture of claim 1, wherein the article is a wax.
5. (Original) The article of manufacture of claim 1, wherein the article is a hot melt adhesive.
6. (Original) The article of manufacture of claim 1, wherein the article is an electrostatic toner.
7. (Original) The article of manufacture of claim 1, wherein the article is a lubricant.
8. (Original) The article of manufacture of claim 1, wherein the copolymer includes a functional group.
9. (Original) The article of manufacture of claim 8, wherein the functional group is a halogen, hydroxyl, anhydride, amine, amide, carboxylic acid, ester, ether, or nitrile group.
10. (Currently Amended) A method of functionalizing a polymer, comprising:  
obtaining a linear copolymer of ethylene and vinyl aromatic monomer having a weight average molecular weight of less than 15,000, the copolymer being characterized by a backbone having a first and second terminal end group, the first terminal end group being a methyl group, the second terminal end group being a vinyl group, wherein the ratio of the terminal methyl group to the terminal vinyl group is 0.8:1 to 1:0.8; and effectuating functionalization of the vinyl group to make a functionalized copolymer.

11. (Original) The method of claim 10, wherein the functionalization is chlorination.
12. (Original) The method of claim 10, wherein the functionalization is epoxidation.
13. (Original) The method of claim 10, wherein the functionalization is oxidation.
14. (Original) The method of claim 10, wherein the functionalization is carboxylation.
15. (Original) The method of claim 10, wherein the functionalization is sulfonation.

**REMARKS/ARGUMENTS**

Claims 1 and 3-15 are pending in this application. Claims 1 and 10 have been amended to recite the molecular weight is weight average molecular weight. Support for this amendment can be found on page 3, lines 25-26. The Applicants respectfully submit that this response does not contain new matter.

**Response to Rejections under 35 U.S.C. §112**

Claims 1 and 3-15 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim amendments have been made to particularly point out and distinctly claim the subject matter which applicant regards as the invention, namely that the molecular weight is a weight average molecular weight.

**CONCLUSION**

The Applicants have addressed all of the Examiner's rejections. In conjunction with the amendments and arguments above, the Applicants believe that the claims are now in condition for allowance and respectfully requests that the Examiner grant such an action. If any questions or issues remain in the resolution of which the Examiner feels will be advanced by a conference with the Applicants' attorney, the Examiner is invited to contact the attorney at the number noted below.

Should there be any fees required, please charge such fees to Deposit Account 50-3420, reference 31176280-054003(PIELECH).

Dated: April 13, 2007

Respectfully submitted,

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